

# PROJECT 10073 RECORD CARD

1. DATE 4 December 1957		2. LOCATION Over Cincinnati, Ohio		12. CONCLUSIONS <input type="checkbox"/> Was Balloon <input type="checkbox"/> Probably Balloon <input type="checkbox"/> Possibly Balloon  <input type="checkbox"/> Was Aircraft <input type="checkbox"/> Probably Aircraft <input type="checkbox"/> Possibly Aircraft  <input checked="" type="checkbox"/> Was Astronomical Meteor <input type="checkbox"/> Probably Astronomical <input type="checkbox"/> Possibly Astronomical  <input type="checkbox"/> Other _____ <input type="checkbox"/> Insufficient Data for Evaluation <input type="checkbox"/> Unknown	
3. DATE-TIME GROUP Local 1859 GMT 04/2359Z		4. TYPE OF OBSERVATION <input type="checkbox"/> Ground-Visual <input type="checkbox"/> Ground-Radar <input type="checkbox"/> Air-Visual <input type="checkbox"/> Air-Intercept Radar			
5. PHOTOS <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		6. SOURCE Civilian			
7. LENGTH OF OBSERVATION 2-3 seconds		8. NUMBER OF OBJECTS one		9. COURSE East	
10. BRIEF SUMMARY OF SIGHTING White light, bright as the moon. No sound, descending toward horizon and just disappeared.				11. COMMENTS Probably a meteor -- Earth now entering Geminids meteor shower.	



## ASTRONOMY

# Venus Is Christmas Star

A crescent moon and the planet Venus will be close together on December 24, making a brilliant pair that lights the Christmas sky.

By JAMES STOKLEY

► This year we will have a real Christmas star. The planet Venus, which has been increasing in prominence during the autumn, will be at its greatest brilliance on Dec. 23.

After the sky gets dark, around this date, Venus will be blazing in the southwest, until it follows the sun below the horizon, more than three hours later. But even this will not be the full extent of the display. On the 24th, the moon, in a crescent phase, three days after the new moon, will pass just to the north of Venus. While the closest approach comes, for Americans, during daylight hours, they will still be close together that evening, Christmas eve, and will form a striking backdrop for the carolers singing their Yuletide greetings.

Venus is the only planet that can be seen well on December evenings. On the seventh, Mercury is farthest east of the sun and will remain briefly in the southwestern sky after the sun has set. Possibly, if you have a very clear view in that direction, and look closely, you can get a glimpse of this innermost of all the planets, but this is not really a favorable time to see Mercury.

No planets appear on the accompanying maps of the December evening skies, for these show their appearance later in the evening, after Venus has set. They are drawn for about 10:00 p.m., your own kind of standard time, on Dec. 1, and an hour earlier at the middle of the month.

In the southeast there is now visible the brilliant array of stars which make the skies of the winter evening so beautiful.

## Dog-Star Is Brightest

Brightest of these stars is Sirius, the dog-star, part of Canis Major, the great dog, shown near the horizon. However, its low altitude causes a partial diminution of its light. Later in the night it climbs higher in the southern sky and is then even more conspicuous.

On the astronomer's scale of star brightnesses, Sirius is of magnitude minus 1.4, which means that it exceeds any other star that we can see in the nighttime sky. Compared to Venus, however, it is relatively faint, for the magnitude of that planet is minus 4.4. Venus now is nearly 16 times as bright as Sirius.

Above Sirius, Orion, the warrior, may be seen. In this group are two bright stars of the "first magnitude": Betelgeuse, to the left, and Rigel, a little lower and to the right. Between them is a row of three fainter stars that form Orion's belt.

Directly above Orion is Taurus, the bull,

with Aldebaran as the brightest star; distinctly red in hue, it is easy to identify.

To the left of Taurus is Auriga, the charioteer, with the star Capella, another of the first magnitude.

Descending from Capella, we come to Gemini, the twins, with the stars called Castor and Pollux, of which the latter is the brighter. And between Gemini and Canis Major stands Canis Minor, the lesser dog, with Procyon as the brightest star.

Over toward the southwest are found the remnants of the constellations of the autumn evenings. Near the horizon, as shown on the maps, or higher if it is earlier in the evening, is Vega, about all that is seen of Lyra, the lyre. Above and to the left is Cygnus, the swan, with Deneb. While Vega and Deneb both are first magnitude stars, their low altitude makes them look fainter.

About 3:30 a. m., at the beginning of December, and 1:30 a. m., at the end, another planet, Jupiter, appears in the southeast, in Virgo, the virgin. Its brightness now is just about the same as that of Sirius. Mars, of the second magnitude,

rises later, about two hours before the sun, in Libra, the scales.

If, on Christmas eve, when the crescent moon is standing nearby, you look at Venus through a telescope, you will find that it also is in a crescent phase.

## Crescent Venus

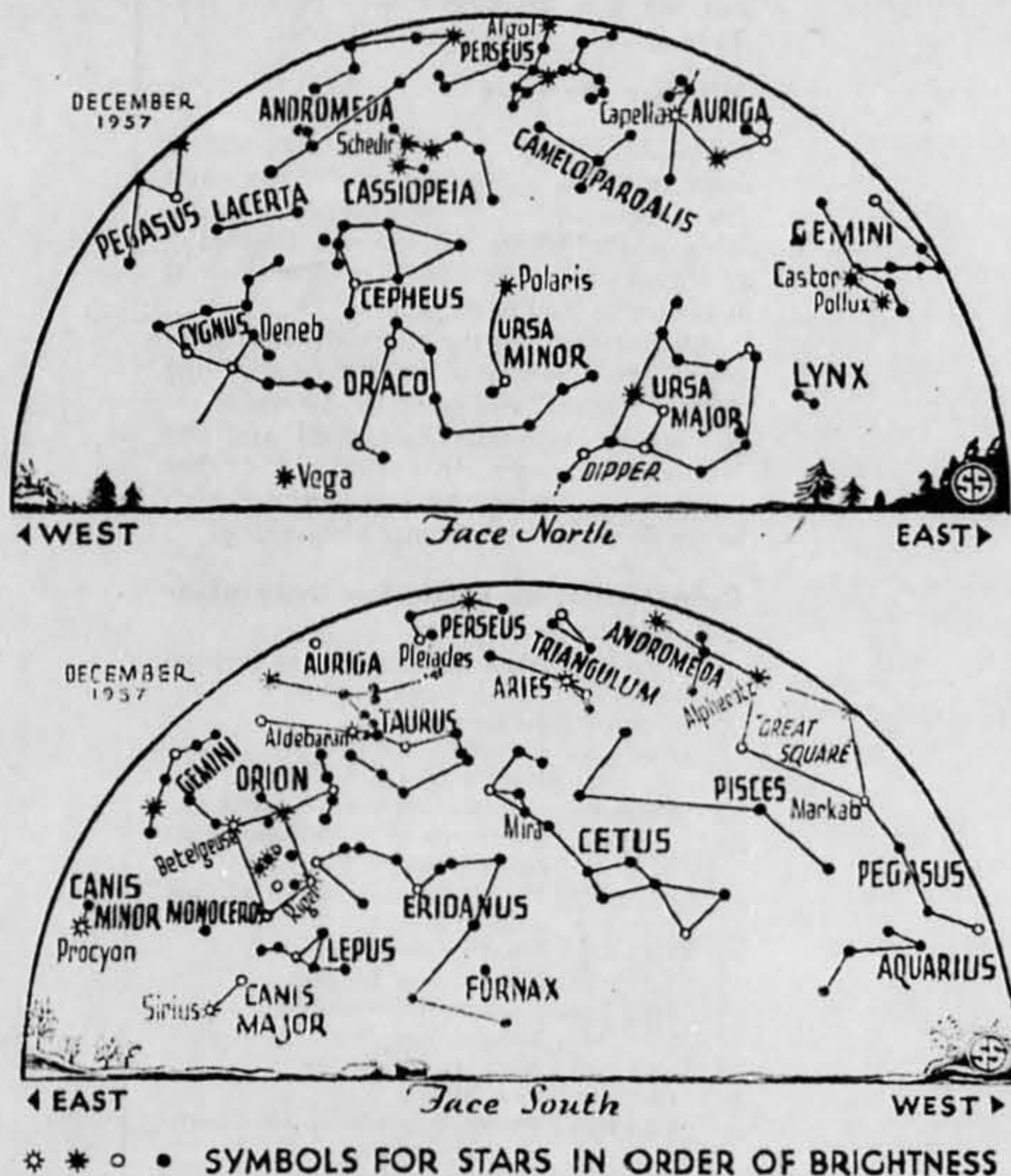
It will not be quite as thin a crescent as that of the moon, but more like the moon some two days later, or about five days after it is new.

The reason for the lunar phases is found in the fact that, as the moon revolves around the earth, it presents to our view varying amounts of its illuminated hemisphere.

At new, it is practically between the sun and us; the sunlit half is entirely turned away and we see nothing. But a few days later, as the moon swings eastward from the direction of the sun, it remains in the western sky for a while after the sun has set. A narrow sliver of the bright half then appears to us, as a crescent. Then, as it swings still farther away from the sun, half, three-quarters, and finally all, of the sunlit side is presented to us, bringing the full moon.

This takes about two weeks. During the next two weeks the changes occur in reverse order, and the moon is new once again.

Something similar happens to Venus.





1957

In December, radio officer [REDACTED] of the British Ship S.S. Ramsey, off San Pedro, California in the Pacific Ocean, photographed a strange flying craft with dome, landing struts, antenna, and a retractable ladder.



1957

RECENT NEWS STORIES

**SAUCER WITH HIEROGLYPHICS FOUND IN ENGLAND** (See photo on cover): This story is a bit out of date, but it should be new to most of our American readers: In December of last year, three men found a small flying saucer with strange writing on it on a moor near Yorkshire, England. The men were driving up a steep hill on the moor one night, when the engine of their car suddenly cut out. According to their report to the newspapers, they then saw a glowing object in the sky above some nearby trees. The object appeared to fall to the ground. One of the men, named Hutton, then took a flashlight and went out to locate it, and having done so, he returned to the car to tell his friends. On the way back to the car, he passed a man and woman on a little-used path. When he returned to the spot on the moor where he had located the object a few minutes before, it was no longer there. It subsequently developed that this other man, who is not identified by name in the papers, had picked up the mysterious object, and Hutton and his friends eventually bought it from him for \$28. They then lent it to another unnamed man whom they believed to be an authority on flying saucers.

The base of this mysterious saucer-shaped object is made of copper. It is double-skinned, with a metal coating about  $3/16$ th of an inch thick. It has two vent holes in the top, with scorch marks around them. A shaft runs through the middle, and with a flashlight it is possible to look into the interior. Therein is found some copper tubing about a quarter of an inch in diameter coiled around a metal cylinder. Also inside is a powdery substance of some kind. The object is strongly made, and if it is a mere hoax, it must have cost the hoaxter a fairly large amount of money to construct it.

There are hieroglyphics on the outside of the saucer, and when the object was taken apart, 17 thin copper sheets similar to tin foil in texture were found inside it in the form of a book. The above-mentioned flying saucer authority claims to have translated the outside message as follows: "Friends. Message inside to be dealt with by philosophers, not officials. Good wishes. Ulo." The inside message, written on these 17 copper sheets, begins as follows: "My name is Ulo, and I write this message to you, my friends on the planet of the sun you call earth. Where I live I will not say. You are a fierce race, and prepare for space travel...." The man who made this translation was quoted as saying, "I accept this as a message, but I don't accept that it comes from another planet. I think it was devised as a method of presenting certain ideas to the public - either by way of propaganda or advice. It may have come from a body of scientists, who, if they tried to put over their message in a normal way, might be guilty of a breach of trust." We of SAUCER NEWS are inclined to agree in general with this interpretation, assuming that the saucer is not an outright hoax after all.



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UFO file  
JUNE-JULY  
1958

# SAUCER NEWS

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OFFICIAL PUBLICATION OF THE SAUCER AND UNEXPLAINED CELESTIAL EVENTS RESEARCH SOCIETY

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MAILING ADDRESS:

P. O. BOX 163, FORT LEE, N. J.

EDITOR:

JAMES W. MOSELEY



IN THE ABOVE PHOTO, an Englishman is holding a small mysterious saucer which fell to earth on an English moor last December. See story on Page 17 for details. (Photo courtesy of Bryan Essenhigh.)

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NX49

(DU)

1957

REGINA, SASK., DEC. 2.--(UP)--THE WINNIPEG FREE PRESS REPORTED TODAY THAT A FLEMING, SASK. FARMER, IDENTIFIED AS ~~XXXXXXXXXX~~, FOUND A CHARRED CHUNK OF METAL BEARING RUSSIAN LETTERING ON HIS FARM TODAY.

BUT POLICE, THE FLEMING POST OFFICE AND MUNICIPAL OFFICIALS SAID THEY HAD NEVER HEARD THE NAME.

THE FREE PRESS STORY SAID THE FARMER SHIPPED HIS FIND TO THE REGINA LEADER POST TO CLAIM A \$100 REWARD OFFERED BY THE PAPER TO THE FINDER OF THE FIRST PIECE OF THE ROCKET.

BERT MCKAY, EDITOR OF THE WORLD-SPECTATOR AT NEARBY MOOSON IN, SAID HE CHECKED THE POST OFFICE, THE EXPRESS OFFICE AND THE BUS LINES AND FOUND THAT NOTHING HAD BEEN SHIPPED TO THE REGINA LEADER POST FROM THE FLEMING AREA TODAY.

HE SAID A BRANDON, MAN., TELEVISION STATION CARRIED A STORY THAT THE ROCKET CARRIER CRASHED IN SASKATCHEWAN BUT THAT WHEN THE TELEVISION STATION SENT A CREW TO THE SCENE THEY COULD FIND NO TRACE OF THE METAL OR OF THE FARMER WHO REPORTED FINDING IT.

..WW1058P



5 - 9 DECEMBER 1957 SIGHTINGS

DATE	LOCATION	OBSERVER	EVALUATION
5	O'Fallon, Illinois	[REDACTED]	Astro (METEOR)
5	Porto Alegre, Brazil	Brazilian Military	Insufficient Data
5	Cedar Key, Florida	[REDACTED]	Balloon
5	Lake City, Florida	[REDACTED]	Insufficient Data
5	Lake City, Florida	[REDACTED]	Balloon
5	New Orleans, Louisiana (see folder)	[REDACTED] (PHYSICAL S) (X)	Other (PARACHUTE FLARE)
5	S Weymouth, New Jersey	[REDACTED]	Aircraft
5	Newburgh, New York (CASE MISSING)	Civilian	Balloon
5	Texarkana, Texas	Civilian (Air Vis)	Aircraft
5	Griffis AFB, New York	[REDACTED]	Aircraft
5	Long Island, New York, Maryland	Multi (6 reports)	Astro (METEOR)
5	Torrington, Connecticut	Civilian	Other (UNRELIABLE REPORT)
5	Oceana NAS, Virginia	Multi (Military)	Astro (STAR/PLANET)
5	Northeastern U. S.	Multi (9 reports)	Astro (METEOR)
5	Yonkers, New York	[REDACTED]	Astro (METEOR)
5	Mountain Lake, New Jersey	[REDACTED]	Aircraft
5-10	Cincinnati, Ohio	[REDACTED] (PHOTO)	Astro (MOON)
6	La Madera, New Mexico	[REDACTED]	Insufficient Data
6	Savannah/Albany, Georgia	Military	Astro (VENUS)
6	Nome, Alaska	Multi	Astro (METEOR)
7	Bowbells, North Dakota	[REDACTED]	Astro (METEOR)
7	Shreveport, Louisiana	[REDACTED]	Aircraft
7	Kildare, Linden, Texas/Shreveport, La	[REDACTED]	Balloon
7	Darrington, Washington	Civilian	Astro (VENUS)
8	Tiflet-Monor, Morocco	Military	1. Aircraft Contrails 2. Astro (VENUS)
8	Comfort, Texas	State Highway Patrol	Other (PARACHUTES)
8	Loving, Texas	[REDACTED]	Insufficient Data
8	Montana, Canadian Border	Military	Other (REFLECTION)
8	Laramie, Wyoming	[REDACTED]	Astro (METEOR)
8	Bremerton, Washington	[REDACTED]	Astro (METEOR)
8	Belmont, California	Multi	Aircraft
9	Uruguay	[REDACTED]	Insufficient Data
9	Itazuke, Japan	[REDACTED]	Astro (VENUS)
9	Argyle, Iowa	[REDACTED]	Insufficient Data
9	Moriarty, New Mexico	[REDACTED]	Astro (METEOR)
9	Redlands, California	[REDACTED]	Astro (VENUS)
9	Dothan, Alabama	Military Air	Aircraft

ADDITIONAL REPORTED SIGHTINGS (NOT CASES)

DATE	LOCATION	SOURCE	EVALUATION
Dec	Universe	Science News Ltr	
5	Philadelphia, Pennsylvania	Science News Ltr	

(K) IN SEPARATE FOLDER



4 / 23598  
Multi

ASTRO

36

# U. S. AIR FORCE TECHNICAL INFORMATION SHEET

This questionnaire has been prepared so that you can give the U. S. Air Force as much information as possible concerning the unidentified aerial phenomenon that you have observed. Please try to answer as many questions as you possibly can. The information that you give will be used for research purposes, and will be regarded as confidential material. Your name will not be used in connection with any statements, conclusions, or publications without your permission. We request this personal information so that, if it is deemed necessary, we may contact you for further details.

1. When did you see the object?

4 DEC 57  
Day Month Year

2. Time of day: 185-9

Hour

Minutes

(Circle One):

A.M.

or

P.M.

3. Time zone:

(Circle One):

250 Knot  
a. Eastern

b. Central

c. Mountain

d. Pacific

e. Other \_\_\_\_\_

(Circle One):

a. Daylight Saving

b. Standard

4. Where were you when you saw the object?

over Cincinnati 25,000'

Nearest Postal Address

City or Town

State or Country

Additional remarks: \_\_\_\_\_

5. Estimate how long you saw the object.

Hours

Minutes

2 or 3  
Seconds

5.1 Circle one of the following to indicate how certain you are of your answer to Question 5.

a. Certain

b. Fairly certain

c. Not very sure

d. Just a guess

6. What was the condition of the sky?

(Circle One):

a. Bright daylight

b. Dull daylight

c. Bright twilight

d. Just a trace of daylight

e. No trace of daylight

f. Don't remember

7. IF you saw the object during DAYLIGHT, TWILIGHT, or DAWN, where was the SUN located as you looked at the object?

(Circle One):

a. In front of you

b. In back of you

c. To your right

d. To your left

e. Overhead

f. Don't remember

Dr. Conant (astro)  
Now entering Herminio meteor shower



8. IF you saw the object, at NIGHT, TWILIGHT, or DAWN, what did you notice concerning the STARS and MOON?

8.1 STARS (Circle One):

- a. None
- b. A few
- ☒ c. Many
- d. Don't remember

8.2 MOON (Circle One):

- ☒ a. Bright moonlight
- b. Dull moonlight
- c. No moonlight — pitch dark
- d. Don't remember

9. Was the object brighter than the background of the sky?

(Circle One):

☒ a. Yes

b. No

c. Don't remember

10. IF it was BRIGHTER THAN the sky background, was the brightness like that of an automobile headlight?:

(Circle One) a. A mile or more away (a distant car)?

b. Several blocks away?

c. A block away?

d. Several yards away?

☒ e. Other - *Bright as moon*

11. Did the object:

(Circle One for each question)

- |   |                                      |                                     |            |
|---|--------------------------------------|-------------------------------------|------------|
| a. Appear to stand still at any time?           | Yes                                  | <input checked="" type="radio"/> No | Don't Know |
| b. Suddenly speed up and rush away at any time? | Yes                                  | <input checked="" type="radio"/> No | Don't Know |
| c. Break up into parts or explode?              | <input checked="" type="radio"/> Yes | <input checked="" type="radio"/> No | Don't Know |
| d. Give off smoke?                              | Yes                                  | <input checked="" type="radio"/> No | Don't Know |
| e. Change brightness?                           | Yes                                  | <input checked="" type="radio"/> No | Don't Know |
| f. Change shape?                                | Yes                                  | <input checked="" type="radio"/> No | Don't Know |
| g. Flicker, throb, or pulsate?                  | Yes                                  | <input checked="" type="radio"/> No | Don't Know |

12. Did the object move behind something at anytime, particularly a cloud?

(Circle One):

Yes

☒ No

Don't Know.

IF you answered YES, then tell what

it moved behind: \_\_\_\_\_

13. Did the object move in front of something at anytime, particularly a cloud?

(Circle One):

Yes

☒ No

Don't Know.

IF you answered YES, then tell what

it moved in front of: \_\_\_\_\_

14. Did the object appear:

(Circle One):

a. Solid?

b. Transparent? *Light*

c. Don't Know.

15. Did you observe the object through any of the following?

- |  |     |    |                |     |    |
|--|-----|----|----------------|-----|----|
| a. Eyeglasses                                  | Yes | No | e. Binoculars  | Yes | No |
| b. Sun glasses                                 | Yes | No | f. Telescope   | Yes | No |
| <input checked="" type="radio"/> c. Windshield | Yes | No | g. Theodolite  | Yes | No |
| d. Window glass                                | Yes | No | h. Other _____ |     |    |

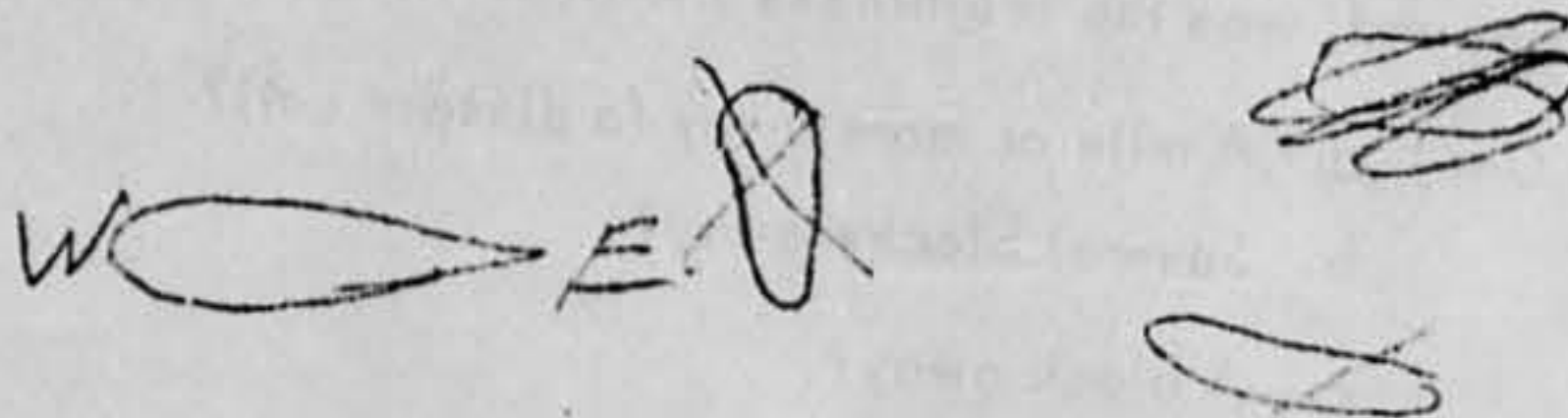


16. Tell in a few words the following things about the object.

a. Sound no

b. Color white light

17. Draw a picture that will show the shape of the object or objects. Label and include in your sketch any details of the object that you saw such as wings, protrusions, etc., and especially exhaust trails or vapor trails. Place an arrow beside the drawing to show the direction the object was moving.



18. The edges of the object were:

- (Circle One):
- a. Fuzzy or blurred
  - b. Like a bright star
  - c. Sharply outlined
  - ☒ d. Don't remember

e. Other \_\_\_\_\_

19. IF there was MORE THAN ONE object, then how many were there? one  
Draw a picture of how they were arranged, and put an arrow to show the direction that they were traveling.



20. Draw a picture that will show the motion that the object or objects made. Place an "A" at the beginning of the path, a "B" at the end of the path, and show any changes in direction during the course.



W E  
descending toward  
horizon at 20° angle

21. IF POSSIBLE, try to guess or estimate what the real size of the object was in its longest dimension.  
\_\_\_\_\_ feet. *no*

22. How large did the object or objects appear as compared with one of the following objects held in the hand and at about arm's length?

(Circle One):

- a. Head of a pin
- b. Pea
- ☒ c. Dime
- d. Nickel
- e. Quarter
- f. Half dollar

- g. Silver dollar
- h. Baseball
- i. Grapefruit
- j. Basketball
- k. Other \_\_\_\_\_

- 22.1 (Circle One of the following to indicate how certain you are of your answer to Question 22.

- a. Certain
- ☒ b. Fairly certain

- c. Not very sure
- d. Uncertain

23. How did the object or objects disappear from view? *just disappeared*

24. In order that you can give as clear a picture as possible of what you saw, we would like for you to imagine that you could construct the object that you saw. Of what type material would you make it? How large would it be, and what shape would it have? Describe in your own words a common object or objects which when placed up in the sky would give the same appearance as the object which you saw.



25. Where were you located when you saw the object?  
(Circle One):

- a. Inside a building
- b. In a car
- c. Outdoors
- ☒ d. In an airplane
- e. At sea
- f. Other \_\_\_\_\_

26. Were you (Circle One)

- a. In the business section of a city?
- b. In the residential section of a city?
- c. In open countryside?
- d. Flying near an airfield?
- ☒ e. Flying over a city?
- f. Flying over open country?
- g. Other \_\_\_\_\_

27. What were you doing at the time you saw the object, and how did you happen to notice it?

*in flight slight to right and slight  
looked like craft passing by my right*

28. IF you were MOVING IN AN AUTOMOBILE or other vehicle at the time, then complete the following questions:

28.1 What direction were you moving? (Circle One)

- |              |              |              |              |
|--------------|--------------|--------------|--------------|
| a. North     | c. East      | e. South     | g. West      |
| b. Northeast | d. Southeast | f. Southwest | h. Northwest |

28.2 How fast were you moving? \_\_\_\_\_ miles per hour.

28.3 Did you stop at any time while you were looking at the object?

(Circle One)      Yes      No

29. What direction were you looking when you first saw the object? (Circle One)

- |              |              |              |  |
|--------------|--------------|--------------|--|
| a. North     | c. East      | e. South     | <input checked="" type="radio"/> g. West |
| b. Northeast | d. Southeast | f. Southwest | h. Northwest                             |

30. What direction were you looking when you last saw the object? (Circle One)

- |   |              |              |              |
|---|--------------|--------------|--------------|
| <input checked="" type="radio"/> a. North | c. East      | e. South     | g. West      |
| b. Northeast                              | d. Southeast | f. Southwest | h. Northwest |

31. If you are familiar with bearing terms (angular direction), try to estimate the number of degrees the object was from true North and also the number of degrees it was upward from the horizon (elevation).

31.1 When it first appeared:

- a. From true North 10°-15° E degrees.
- b. From horizon 45° degrees.

31.2 When it disappeared:

- a. From true North 15° W degrees.
- b. From horizon 25° degrees.



34. What were the weather conditions at the time you saw the object?

34.1 CLOUDS (Circle One)

- ☒ a. Clear sky
- ☐ b. Hazy
- ☐ c. Scattered clouds
- ☐ d. Thick or heavy clouds
- ☐ e. Don't remember

34.2 WIND (Circle One)

- ☐ a. No wind
- ☐ b. Slight breeze
- ☐ c. Strong wind
- ☒ d. Don't remember

34.3 WEATHER (Circle One)

- ☒ a. Dry
- ☐ b. Fog, mist, or light rain
- ☐ c. Moderate or heavy rain
- ☐ d. Snow
- ☐ e. Don't remember

34.4 TEMPERATURE (Circle One)

- ☒ a. Cold
- ☐ b. Cool
- ☐ c. Warm
- ☐ d. Hot
- ☐ e. Don't remember

35. When did you report to some official that you had seen the object?

5 Dec 57  
Day Month Year

36. Was anyone else with you at the time you saw the object?

(Circle One) ☒ Yes ☐ No

36.1 IF you answered YES, did they see the object too?

(Circle One) ☒ Yes ☐ No

36.2 Please list their names and addresses:

~~XXXXXXXXXX~~ INSTITUTE OF Tech.

37. Was this the first time that you had seen an object or objects like this?

(Circle One) ☒ Yes ☐ No

37.1 IF you answered NO, then when, where, and under what circumstances did you see other ones?

seen comets like this  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

38. In your opinion what do you think the object was and what might have caused it?

Comet



39. Do you think you can estimate the speed of the object?

(Circle One)

Yes

No

VERY FAST

IF you answered YES, then what speed would you estimate?

\_\_\_\_\_ m.p.h.

40. Do you think you can estimate how far away from you the object was?

(Circle One)

Yes

No

IF you answered YES, then how far away would you say it was?

\_\_\_\_\_ feet.

41. Please give the following information about yourself:

NAME

\_\_\_\_\_ Last Name

\_\_\_\_\_ First Name

W Middle Name

ADDRESS

Institute of Tech. Street

WPAFB City

OHIO Zone

State

TELEPHONE NUMBER

\_\_\_\_\_

What is your present job?

Student

Age

36

Sex

M

Please indicate any special educational training that you have had.

a. Grade school

✓

e. e. Technical school

Flight Eng.

b. High school

✓

(Type)

Pilot Training

c. College

3 yrs

f. Other special training

d. Post graduate

NO

Radio Mach. School

42. Date you completed this questionnaire:

\_\_\_\_\_ Day

\_\_\_\_\_ Month

\_\_\_\_\_ Year



Like the moon, it has no light of its own but is illuminated by the sun, so that one half is bright and the opposite half dark.

Last April 14 it was out beyond the sun, with the entire bright hemisphere turned earthwards. Since then it has been moving and is now coming between the earth and sun. Thus, most of its sunlit hemisphere is turned away, and we have a crescent phase.

On Jan. 28 it will be, nearly, directly between us and the sun, and this will correspond to new moon. After that it will become a crescent again, visible in the morning sky before sunrise.

Unlike the moon, Venus is always so far away that only through a telescope are its phases visible.

The phases of Venus differ from those of the moon in another respect.

As the moon travels around the earth, its distance does not change very greatly, only from about 221,000 miles to 253,000 miles.

Thus there is no great change in its apparent size, and the diameter of the full moon is about the same as when it is in a narrow crescent phase. But when Venus is full it is out far beyond the sun, about 160,000,000 miles away. Just before Christmas it will be less than 40,000,000 miles away, and on Jan. 28 its distance will be about 26,000,000 miles. Thus, as it gets near the "new" phase, it is much larger, seemingly, in the sky.

That is why it is brightest when a crescent. Although less than half of the bright side is visible to us, its proximity more than makes up for this, and the part we can see fills the largest area of the sky. Then it is at the greatest brilliance.

### Winter Arrives

On Dec. 21 the sun, which has apparently been traveling southward in the sky since last June, reaches its southernmost point. This is the winter solstice—the beginning of winter in the Northern Hemisphere—and it occurs at 9:49 p. m., EST.

At that moment the sun will be directly over a point near the eastern edge of the Arunta Desert, which is in Australia, on the border between Queensland and the Northern Territory. In Australia, and other southern countries, the sun will be high in the sky, marking summer's beginning.

### Celestial Time Table for December Dec. EST

- 3 6:10 p.m. Algol (variable star in Perseus) at minimum brightness.
- 7 1:16 a.m. Full moon.
- 8 10:00 p.m. Saturn on far side of sun, distance 1,030,000,000 miles.
- 13 early a.m. Geminid meteor shower, meteors apparently radiating from constellation of Gemini.
- midnight Moon nearest, distance 230,100 miles.
- 14 12:45 a.m. Moon in last quarter.
- 16 12:57 p.m. Moon passes Jupiter.
- 18 2:15 a.m. Algol at minimum.
- 3:56 p.m. Moon passes Mars.
- 20 11:04 p.m. Algol at minimum.
- 21 1:12 a.m. New Moon.
- 9:49 p.m. Winter commences in Northern Hemisphere.
- 23 7:53 p.m. Algol at minimum.
- 11:00 p.m. Venus at greatest brilliancy.
- 24 1:27 p.m. Moon passes Venus.

27 11:00 p.m. Moon farthest, distance 251,300 miles.

28 11:52 p.m. Moon in first quarter.

Subtract one hour for CST, two hours for MST, and three for PST.

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